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APPLICANT: Heinen et al.

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TITLE: DATA DETECTION IN PARALLEL DATA STREAMS

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PRELIMINARY AMENDMENT

Dear Sir:

Please amend the application as follows:

IN THE CLAIMS

All of the claims, whether amended or not, are shown below for the convenience of the Examiner.

1. (Amended) A system for at least one of identifying or localizing a serial data stream in a deserialized output, whereby the serial data stream is applied to an input port of a multiplexing device and the deserialized output is provided at a plurality of n output ports of the multiplexing device, the system comprising:

pattern recognition units coupled to each one of the plurality of n output ports and being adapted for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

phase shifting units coupled to each one of the plurality of n output ports and being adapted for shifting the phase of the output of each respective port in

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correspondence with the detected phase of the deserialized identifier pattern.

2. The system of claim 1, further comprising a deserializing unit for deserializing the identifier pattern within the serial data stream to the deserialized identifier pattern.

3. (Amended) A testing unit for testing a multiplexing device adapted for receiving a serial data stream at an input port and for providing a deserialized output at a plurality of n output ports, whereby a known serial data sequence is applied to the input port, the testing unit comprising:

a detecting system for detecting the known serial data sequence in the deserialized output, whereby the serial data stream is applied to an input port of a multiplexing device and the deserialized output is provided at a plurality of n output ports of the multiplexing device, the detecting system comprising:

pattern recognition units coupled to each one of the plurality of n output ports and being adapted for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

phase shifting units coupled to each one of the plurality of n output ports and being adapted for shifting the phase of the output of each respective port in correspondence with the detected phase of the deserialized identifier pattern;

a comparator unit for comparing the deserialized output corresponding to the known serial data sequence with an expected output signal, and

an analyzing unit for analyzing deviations of the deserialized output corresponding to the known serial data sequence with the expected output signal.

4. (Amended) A method for at least one of identifying or localizing a serial data stream in a deserialized output provided at a plurality of n output ports, the method comprising:

providing a pattern recognition at each one of the plurality of n output ports for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

shifting the phase of the output of each respective port in correspondence with the detected phase of the deserialized identifier pattern.

5. (Amended) The method of claim 4, further comprising first deserializing the identifier pattern within the serial data stream to the deserialized identifier pattern.

6. (Amended) A method for testing a multiplexing device adapted for receiving a serial data stream at an input port and for providing a deserialized output at a plurality of n output ports, the method comprising:

applying a known serial data sequence to the input port,

detecting the known serial data sequence in the deserialized output by:

providing a pattern recognition at each one of the plurality of n output ports for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

shifting the phase of the output of each respective port in correspondence with the detected phase of the deserialized identifier pattern,

comparing the deserialized output corresponding to the known serial data sequence with an expected output signal, and

analyzing deviations of the deserialized output corresponding to the known serial data sequence with the expected output signal.

7. (Amended) A software program stored on a data carrier, for executing the

method of claim 4 when run on a data processing system.

Please add the following new claims:

--8. (Newly added) A system for synchronizing a deserialized output with a serial data stream, whereby the serial data stream is applied to an input port of a multiplexing device and the deserialized output is provided at a plurality of n output ports of the multiplexing device, the system comprising:

pattern recognition units coupled to each one of the plurality of n output ports and being adapted for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

phase shifting units coupled to each one of the plurality of n output ports and being adapted for shifting the phase of the output of each respective port in correspondence with the detected phase of the deserialized identifier pattern.

9. (Newly added) The system of claim 8, further comprising a deserializing unit for deserializing the identifier pattern within the serial data stream to the deserialized identifier pattern.

10. (Newly added) A method for synchronizing the deserialized output with the serial data stream, the method comprising:

providing a pattern recognition at each one of the plurality of n output ports for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

shifting the phase of the output of each respective port in correspondence with the detected phase of the deserialized identifier pattern.

11. (Newly added) The method of claim 10, further comprising first deserializing the identifier pattern within the serial data stream to the deserialized identifier pattern.

[illegible]

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

All of the claims, whether amended or not, are shown below for the convenience of the Examiner.

1. (Amended) A system for at least one of identifying or localizing a serial data stream in a deserialized output [or for synchronizing the deserialized output with the serial data stream], whereby the serial data stream is applied to an input port [(PORT0)] of a multiplexing device [(10)] and the deserialized output is provided at a plurality of n output ports [(PORT1-PORT5)] of the multiplexing device [(10)], the system comprising:

pattern recognition units coupled to each one of the plurality of n output ports [(PORT1-PORT5)] and being adapted for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

phase shifting units coupled to each one of the plurality of n output ports [(PORT1-PORT5)] and being adapted for shifting the phase of the output of each respective port [(PORT1-PORT5)] in correspondence with the detected phase of the deserialized identifier pattern.

2. The system of claim 1, further comprising a deserializing unit for deserializing the identifier pattern within the serial data stream to the deserialized identifier pattern.

3. (Amended) A testing unit for testing a multiplexing device [(10)] adapted for receiving a serial data stream at an input port [(PORT0)] and for providing a deserialized output at a plurality of n output ports [(PORT1-PORT5)], whereby a known serial data sequence is applied to the input port [(PORT0)], the testing unit comprising:

a detecting system for detecting the known serial data sequence in the deserialized output, whereby the serial data stream is applied to an input port [(PORT0)] of a multiplexing device [(10)] and the deserialized output is provided at a plurality of n output ports [(PORT1-PORT5)] of the multiplexing device [(10)], the detecting system

comprising:

pattern recognition units coupled to each one of the plurality of n output ports [(PORT1-PORT5)] and being adapted for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

phase shifting units coupled to each one of the plurality of n output ports [(PORT1-PORT5)] and being adapted for shifting the phase of the output of each respective port [(PORT1-PORT5)] in correspondence with the detected phase of the deserialized identifier pattern;

a comparator unit for comparing the deserialized output corresponding to the known serial data sequence with an expected output signal, and

an analyzing unit for analyzing deviations of the deserialized output corresponding to the known serial data sequence with the expected output signal.

4. (Amended) A method for at least one of identifying or localizing a serial data stream in a deserialized output provided at a plurality of n output ports [(PORT1-PORT5) or for synchronizing the deserialized output with the serial data stream], the [system] method comprising:

[(a)] providing a pattern recognition at each one of the plurality of n output ports [(PORT1-PORT5)] for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

[(b)] shifting the phase of the output of each respective port [(PORT1-PORT5)] in correspondence with the detected phase of the deserialized identifier pattern.

5. (Amended) The method of claim 4, further comprising [a step prior to step (a) of] first deserializing the identifier pattern within the serial data stream to the deserialized identifier pattern.

6. (Amended) A method for testing a multiplexing device [(10)] adapted for receiving a serial data stream at an input port [(PORT0)] and for providing a deserialized output at a plurality of n output ports [(PORT1-PORT5)], the method comprising [the steps of]:

- [(a)] applying a known serial data sequence to the input port [(PORT0)],
- [(b)] detecting the known serial data sequence in the deserialized output by:
 - [(b1)] providing a pattern recognition at each one of the plurality of n output ports [(PORT1-PORT5)] for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and
 - [(b1)] shifting the phase of the output of each respective port [(PORT1-PORT5)] in correspondence with the detected phase of the deserialized identifier pattern[.] →
- [(c)] comparing the deserialized output corresponding to the known serial data sequence with an expected output signal, and
- [(d)] analyzing deviations of the deserialized output corresponding to the known serial data sequence with the expected output signal.

7. (Amended) A software program [or product, preferably] stored on a data carrier, for executing [any one of] the method[s] of claim[s] 4 [or 6] when run on a data processing system [such as a computer].

Please add the following new claims:

--8. (Newly added) A system for synchronizing a deserialized output with a serial data stream, whereby the serial data stream is applied to an input port of a multiplexing device and the deserialized output is provided at a plurality of n output ports of the multiplexing device, the system comprising:

pattern recognition units coupled to each one of the plurality of n output ports and being adapted for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

phase shifting units coupled to each one of the plurality of n output ports and being adapted for shifting the phase of the output of each respective port in correspondence with the detected phase of the deserialized identifier pattern.

9. (Newly added) The system of claim 8, further comprising a deserializing unit for deserializing the identifier pattern within the serial data stream to the deserialized identifier pattern.

10. (Newly added) A method for synchronizing the deserialized output with the serial data stream, the method comprising:

providing a pattern recognition at each one of the plurality of n output ports for recognizing a deserialized identifier pattern corresponding to an identifier pattern within the serial data stream and for detecting a phase of the deserialized identifier pattern in the deserialized output, and

shifting the phase of the output of each respective port in correspondence with the detected phase of the deserialized identifier pattern.

11. (Newly added) The method of claim 10, further comprising first deserializing the identifier pattern within the serial data stream to the deserialized identifier pattern.

12. (Newly added) A software program stored on a data carrier, for executing the method of claim 6 when run on a data processing system.